

## COURSE OUTLINE

### 1. GENERAL

<b>SCHOOL</b>	ENGINEERING		
<b>DEPARTMENT</b>	PRODUCT AND SYSTEMS DESIGN ENGINEERING		
<b>LEVEL OF STUDIES</b>	Undergraduate		
<b>COURSE CODE</b>	2301	<b>SEMESTER</b>	3
<b>COURSE TITLE</b>	Production and operation management		
<b>INDEPENDENT TEACHING ACTIVITIES</b> <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		<b>WEEKLY TEACHING HOURS</b>	<b>CREDITS</b>
Lectures		3	6
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
<b>COURSE TYPE</b> <i>general background, special background, specialised general knowledge, skills development</i>	Special Background		
<b>PREREQUISITE COURSES:</b>	NONE		
<b>LANGUAGE OF INSTRUCTION and EXAMINATIONS:</b>	GREEK/ENGLISH		
<b>COURSE DELIVERED TO ERASMUS STUDENTS</b>	YES		
<b>MODULE WEB PAGE (URL)</b>	<a href="https://eclass.uowm.gr/">https://eclass.uowm.gr/</a>		

### 2. LEARNING OUTCOMES

<b>Learning outcomes</b>
<p>The purpose of this course is to introduce the students to the processes and methods for the production and operation management. The topics covered in the course are related to critical decisions, which must be made before the start-up of the business and significantly affect its subsequent operation. The students are introduced to the following concepts: Classification of organization, Functions of business, Scientific management, Choice of business location, Design of production process, Material handling system, Human resource planning, Structure and work organization, Approaches to organization and management and Financial utility.</p> <p><b>On successful completion of this module the learner will be able to:</b></p> <ol style="list-style-type: none"> <li>1. Knows the basic principles of business organization.</li> <li>2. Recognizes the problems of organization and management that appear both in the creation and operation of a business.</li> <li>3. Analyzes the problems of business organization and management.</li> <li>4. Identifies techniques and methodologies for solving these problems.</li> <li>5. Applies the appropriate method for solving them.</li> </ol>
<b>General Skills</b>
<p><b>Upon successful completion of the program students will:</b></p> <ul style="list-style-type: none"> <li>• have the theoretical and practical background on the field of product and systems design engineering and the corresponding profession.</li> <li>• utilize scientific knowledge to understand, analyze and solve problems.</li> <li>• apply a wide range of scientific and technical knowledge concerning the design and development of products and systems.</li> </ul>

### 3. COURSE CONTENTS

<ul style="list-style-type: none"> <li>• <i>Classification of organization</i>: type of organizations, criteria, standard, national business, consortium.</li> <li>• <i>Functions of business</i>: equipment, production, marketing, management.</li> <li>• <i>Scientific management</i>: Principles to guide management, Relevance of scientific management, Human relations, Quantitative analysis.</li> <li>• <i>Choice of business location</i>: Analysis of factors, methodologies, minimization of transportation cost, addition capacity, empiric method.</li> <li>• <i>Design of production process</i>: production phases, alternative production process, break event analysis, capacity planning, plant layout.</li> <li>• <i>Human resource planning</i></li> <li>• <i>Material handling system</i>: deterministic and stochastic.</li> <li>• <i>Structure and work organization</i>: job analysis, desirable task and job characteristics, design of methods, measurement of work.</li> <li>• <i>Approaches to organization and management</i>: Management theory, Developments in management and organizational behavior, Classical, human relations and systems approach, Sets of principles, organization chart.</li> </ul>
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### 4. TEACHING METHODS - ASSESSMENT

<b>MODE OF DELIVERY</b>	In class, face to face	
<b>USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY</b>	<ul style="list-style-type: none"> <li>• Video and slide presentations via projector</li> <li>• Support of teaching process via the electronic platform e-class</li> <li>• Communication with students.</li> </ul>	
<b>TEACHING METHODS</b>	<i>Activity</i>	<i>Semester workload</i>
	Lectures	80
	Projects	40
	Non-directed study	30
	<b>Course total</b>	<b>150</b>
<b>ASSESSMENT METHODS</b>	<p>Projects (they are counted with 20% each in the final score)</p> <p>Final written exam which includes:</p> <ol style="list-style-type: none"> <li>Short-answer questions</li> <li>Problem solving</li> </ol>	

### 5. ATTACHED

<p>- Suggested bibliography:</p> <ol style="list-style-type: none"> <li>1. William Stevenson, Production Operation Management.</li> <li>2. Jay Heizer, Barry Render, Principles of Operations Management.</li> </ol>
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3. Mark Vonberembse, Gregory White, Operations Management Concepts, Methods and Strategy.
4. Norman Gather, Greg Frazier, Production and Operation Management.
5. Roberta Russell, Bernard Taylor, Operations Management.
6. James Dilworth, Operation Management.